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DISCUSSION

Dr Vincent Rowe (*Los Angeles, Calif*). Thank you for allowing me to review this interesting manuscript. Dr Cheng and his team from Hong Kong did a magnificent job of detailing changes seen in chronic uncomplicated type B aortic dissections with and without aneurysmal degeneration. The authors utilized CT scans and imaging software to provide volumetric data of the aorta over a 36 month period poststenting. I believe this manuscript holds significant merit because the radiologic findings found in this study may help answer the question as to whether endografting should become the primary treatment for type B aortic dissections. I do have the following questions for the authors:

Question 1: In relation to the stent graft size, the authors noted changes in the inlet and outlet area over the follow-up period. Based on this, could the authors discuss how the stent grafts were sized in their study at the time of implantation? Also, based on their findings, could they provide any recommendations as to the percent of oversizing required for the best outcome in treating type B dissections?

Question 2: In the study, the authors had patients in both the nonaneurysmal and aneurysmal group show an initial decrease in aortic volume at 6 months and then an increase in total aortic volume at 36 months. In fact, 25% of patients ended the study with an increase in their aortic volume and 37% showed no change in aortic volume. This is compared to the results of the Investigation of Stent Grafts in Aortic Dissection Trial, or INSTEAD trial, where in the medical arm, 20% of patients progressed to require surgery due to aneurysmal degeneration of 6 cm or greater. Based on these findings, could the authors comment on the following:

A. Do you share the same conclusion of that trial in the belief that in treating uncomplicated dissections with endografts, we are merely delaying the inevitable progression of disease?
B. Did any of these patients go on to require a second intervention?
C. Could endoleaks be the cause of increase of aortic volume?

Question 3: The authors noted that longer stent grafts were significantly protective in allowing an increase in aortic volume. Could you please comment on the concept of only stenting across the tear of the dissection and if they believe extension farther down into the descending thoracic aorta would be of benefit?

Thank you, Society, for allowing me to review this paper and I congratulate the authors on an insightful and well written manuscript.

Dr Stephen W. K. Cheng. Thank you, Dr Rowe, for your comments and questions. We would like to answer your questions as follows:

Answer 1: We generally oversize our stent grafts by 10-15% when treating type B aortic dissections. This is in keeping with the general belief that aggressive oversizing may put the patient at a higher risk of retrograde dissections and late distal landing zone tears.

Answer 2A: One quarter of patients in this study showed an increase in aortic volume on follow-up. There is some evidence that shows that TEVAR merely delays but is unable to stop the disease progression in uncomplicated type B dissections, such as those published by Dr Chemelli-Steingruber in JVS in 2009. In his presentation yesterday, Dr Melissano also showed similar trends from his series at 2 years. However, we believe a study with larger numbers and longer follow-up is needed in order to draw any conclusions. The significance of this study is that it answers the question of timing to treat type B aortic dissections with TEVAR.

Answer 2B: Two patients in this study received secondary reintervention. One of them was complicated with retrograde type A dissection and was treated successfully with proximal arch replacement; the other patient developed progressive distal aneurismal enlargement of his thoracoabdominal aorta, and was also successfully treated with a four-vessel fenestrated distal extension.

Answer 2C: Endoleaks in TEVAR-treated aortic dissections are hard to define. The false lumens of type B aortic dissections after TEVAR are usually partially patent as there are always retrograde perfusions from the distal fenestrations or lumbar arteries. Therefore, we have reason to believe the endo-tension in the false lumen of TEVAR-treated type B aortic dissections is the cause of the observed failure in those patients.

Answer 3: In our study, longer stent grafts migrated less and led to more thrombosis in the false lumen, as the longer stent grafts could stabilize the dissecting flaps better. We have moved toward placing longer stent grafts for dissections for this reason. However, longer stent grafts were also indicated when more complicated anatomy was encountered, and these patients would be at a higher risk of failure. In our study, five patients out of eight with aortic volume increase over 10% were treated with longer stent grafts, and it seemed longer stent grafts had led to more failure in terms of aortic volume change.

Again, I thank the Society for granting us the opportunity to present our study on this stage.